

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7: G01N 27/447

(11) International Publication Number:

WO 00/57170

A1

(43) International Publication Date: 28 September 2000 (28.09.00)

(21) International Application Number:

PCT/CA00/00251

(22) International Filing Date:

10 March 2000 (10.03,00)

(30) Priority Data:

60/125,243

19 March 1999 (19.03.99)

ขร

(71) Applicant (for all designated States except US): THE GOVER-NORS OF THE UNIVERSITY OF ALBERTA [CA/CA]; 222 Campus Tower, 8625-112 Street, Edmonton, Alberta T6G 2E1 (CA).

(72) Inventor; and

(75) Inventor/Applicant (for US only): DOVICHI, Norman, J. [US/CA]; 10924 125th Street, Edmonton, Alberta TSM 0L6 (CA), CAL

(74) Agent: BERESKIN & PARR; 40 King Street West, 40th floor, Toronto, Ontario M5H 3Y2 (CA).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR. BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD. MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurosian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, AZ, BY, KG, KZ, MD, RU, TZ, TM), European patent (AT, AZ, BY, KG, KZ, MD, RU, TZ, TM), European patent (AT, AZ, BY, KG, KZ, MD, RU, TZ, TM), European patent (AT, AZ, BY, KG, KZ, MD, RU, TZ, TM), European patent (AT, AZ, BY, KG, KZ, MD, RU, TZ, TM), European patent (AT, AZ, BY, KG, KZ, MD, RU, TZ, TM), EUROPEAN (AT, AZ, BY, KG, KZ, MD, RU, TZ, TM), EUROPEAN (AT, AZ, BY, KG, KZ, MD, RU, TZ, TM), EUROPEAN (AT, AZ, BY, KG, KZ, MD, RU, TZ, TM), EUROPEAN (AT, AZ, BY, KG, KZ, MD, RU, TZ, TM), EUROPEAN (AT, AZ, BY, KG, KZ, TM), EUROPEAN (AT, AZ, BY, TM), EUROPEAN (AT, AZ, BY, TM), EUROPEAN (AZ, BY, TM), EUROPEAN (AZ, BY, TM), EUROPEAN (AZ, BY, TM), EUROP BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW. ML, MR, NE, SN, TD, TG).

Published

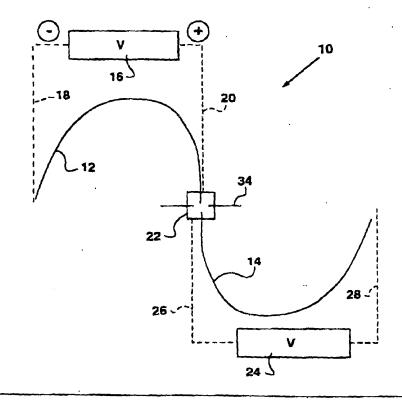
With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: AUTOMATED 2-DIMENSIONAL ANALYSIS OF BIOLOGICAL AND OTHER SAMPLES

(S7) Abstract

A method and apparatus are provided for separation and detection of components within a sample, particularly biological samples. The sample is subject to a first separation technique, for example isoelectric focusing, electrophoresis or the like. After this first separation step, the sample is separated into fractions, and each fraction is then subject to a second separation technique, which for example can be some form of chromatography, the components leaving the second separation step and then detected. This enables a two-dimensional separation technique to be applied, wherein the two separation techniques are different, for example isoelectric focusing and an SDS/gel capillary technique. The first and second separation techniques are conveniently carried out in first and second capillaries. A further aspect of the invention provides a manifold connecting together pairs of capillaries, so as to provide multiple dual separation systems operated in parallel, for example 96 pairs of capillaries. The invention is particularly intended to provide high solution separation and high sensitivity of detection for components in biological samples.



ųĎ J i.s. Ü Ü

201

ABSTRACT

A method and apparatus are provided for separation and detection of components within a sample, particularly biological samples. The sample is subject to a first separation technique, for example isoelectric focusing, electrophoresis or the like. After this first separation step, the sample is separated into fractions, and each fraction is then subject to a second separation technique, which for example can be some form of chromatography, the components leaving the second separation step and then detected. This enables a two-dimensional separation technique to be applied, wherein the two separation techniques are different, for example isoelectric focusing and an SDS/gel capillary technique. The first and second 10 separation techniques are conveniently carried out in first and second capillaries. A further aspect of the invention provides a manifold connecting together pairs of capillaries, so as to provide multiple dual separation systems operated in parallel, for example 96 pairs of capillaries. The invention is particularly intended to provide high solution separation and high sensitivity of detection for components in biological samples.